

Geometry 7.2 Notes: Reflections (pp 405-407)

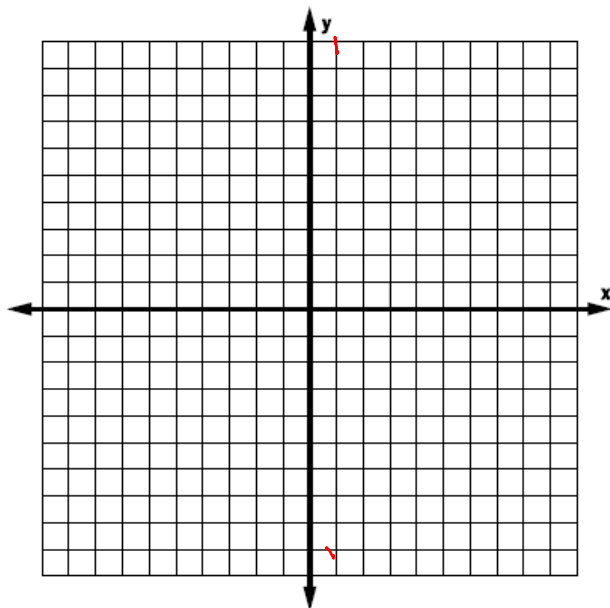
Properties of a line of reflection.

Examples: Graph the given reflection.

1. $W(-3, 3)$ in the y -axis.
2. $Z(1, 3)$ in the line $x = 1$.

3. Two identical house plots in a new development will be reached by the same road. How can you locate the road to ensure that all corresponding points on the two plots are equidistant from the road?

4. **Guided Practice:** The coordinates of $\triangle ABC$ are $A(1, 3)$, $B(4, 2)$ & $C(3, 6)$. If the triangle is reflected on the x -axis, what is the length of $\overline{A'B'}$?



Examples: Determine the number of lines of symmetry in the quadrilateral.

5.



6.



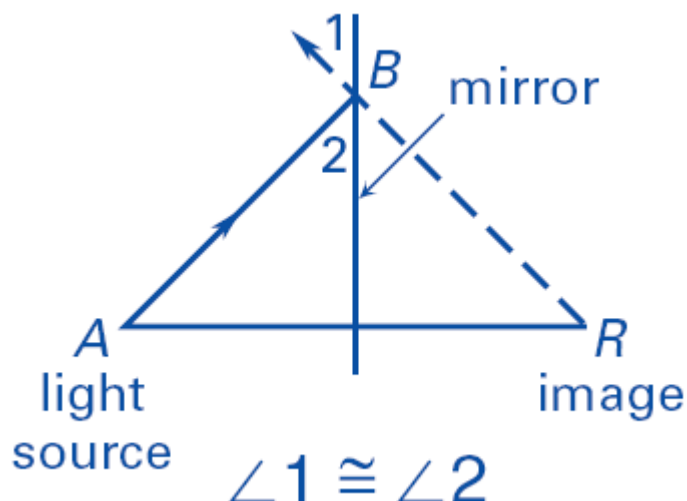
7.



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8. Example: When light reflects off a flat mirror, the angle at which the light makes contact with the mirror is equal to the angle at which the light reflects off the mirror. Thus, when a light source at A bounces off a flat mirror at B , the mirror acts as a line of symmetry and creates an image that appears to come from a point R that is behind the mirror. If the light source at A is 1 ft from the mirror, how many feet behind the mirror does its image appear to be?



Guided Practice.

9. Inside a kaleidoscope, two mirrors are placed next to each other to form a V, as shown. The angle between the mirrors determines the number of lines of symmetry in the image. The formula, $n(m\angle A) = 180^\circ$, can be used to calculate the angle between the mirrors, A , or the number of lines of symmetry in the image, n . If the image in a kaleidoscope has 5 lines of symmetry, at what angle are the mirrors placed?



10. Describe what a *line of symmetry* is.

11. When a point is reflected in the x -axis, how are the coordinates of the image related to the coordinates of the preimage?